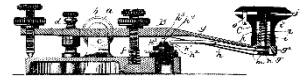




Bexar Wire

San Antonio Radio Club
W5SC



2017, No. 5

May 2017



David P. Finell, N7LRY, presenting his program on Vector Network Analyzers at the SARC meeting on April 13, 2017



Harold Fleischer, AE5AS, President, SARC, presenting David P. Finell, N7LRY, a Program Certificate of Achievement for his excellent presentation

Vector Network Analyzers

At the 7:00 p. m. meeting on Thursday, April 13, 2017 at Grady's Barbeque, 327 E. Nakoma Dr., San Antonio, TX 78216, the program was on the Vector Network Analyzers. David P. Finell, N7LRY, was the presenter for this program.

David P. Finell, N7LRY, started his presentation by explaining what a Vector Network Analyzer can do especially as opposed to a SWR meter or antenna analyzer. The ability to analyze a network, often an antenna, over a whole spectrum of frequencies is a key differential for a Vector Network Analyzer. As a consequence, Vector Network Analyzers are usually very expensive. David, N7LRY, then went on to talk about the KeChuang (KC) Institute KC901C, KC901S, and KC901V Vector Network Analyzers that are now available which Ham operators might find affordable at \$1299 (KC901S). If a Ham likes to build and test various antenna configurations over most Ham frequencies, then a Vector Network Analyzer would be a very good tool to assist in optimizing an antenna. (A copy of the slides start on page 6.)

Generally, the officer and committee chairperson reports were routine, but there were four reports worth highlighting. First, Mike Harrison, KB5KST, made an impassioned solicitation for members to step forward and volunteer to present a program at a future meeting. This was sufficiently successful that he pretty well filled out his schedule for the year. Second Bob Rodriguez, K5AUW, announced a Technician Class starting on May 27, 2017. (Continued on Page 5)

BITX40 QRP SSB Transceiver Board

Our next club meeting will be at 7:00 p. m. (1900) on Thursday, May 11, 2017, at Grady's Barbeque, 327 E. Nakoma Dr., San Antonio, TX 78216. The program will be a presentation on *BITX40 QRP SSB Transceiver Board* by Richard Elder, WB5ACN. Come early and join us for supper.

SAN ANTONIO RADIO CLUB

PRESIDENT'S RADIOGRAM

NUMBER	PRECEDENCE	HX	STATION OF ORIGIN	CHECK	PLACE OF ORIGIN	TIME FILED	DATE
5	R		AE5AS		San Antonio, TX		May

TO

W5SC

Field Day 2017, Field Day 2017, and more Field Day 2017. There is a separate article on Field Day 2017 in this newsletter on Page 16, but clearly Field Day 2017 is my top priority right now. Joes Bruno, W5AUQ, is definitely sidelined through the summer. (Incidentally, he is making progress on his recovery, but it will be a long one.) Joe, W5AUQ, may not be physically up to it, but his brain is still in the game, and he is giving good advice. As happened for Radio Fiesta 2017 where a lot of people volunteered to undertake important tasks, the same thing is happening for Field Day 2017. Richard Elder, WB5ACN, helped ensure we are on track with the City of Shavano Park, which is our Field Day site. Richard, WB5ACN, also helping to identify the components of our antennas, tents, supporting antenna poles, etc. Rich Roudebush, N4DCA, has been out to the warehouse helping label, test, and repair stuff twice. He is taking on the generators. Paul Guido, N5IUT, and others have accepted calls to help. So far, I have identified two members with trailer hitches. I expect a lot more to come together between now and June 23, 2017 when we start setup. Any member who would like to be involved in preparatory work should simply contact me. I would prefer Joe, W5AUQ, to be doing a lot of this just like he wants, but it is a good learning experience for me and the others involved in the preparatory work.

Richard Elder, WB5ACN, tells me that the tailgate swap meet at Hangar 18 Surplus will be slipped a week to Saturday, May 27, 2017 (See Page 16 for more information.) Hangar 18 Surplus will be at the Dayton Hamvention on the third Saturday. So far, this experiment seems to be working. I expect to be getting some PL259 connectors, S0239 barrel connectors, etc. to support Field Day 2017 after we test all of the RF Cables for continuity and check existing connectors.



Think Field Day 2017!

Harold

AE5AS

Bexar Wire

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San Antonio Radio Club

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The due date for articles is the Friday before the first Monday of the month.

Harold Fleischer, AE5AS, President, called the meeting to order at 7:00 p. m. at Grady's BAR-B-Q, 327 E. Nakoma Dr., San Antonio, TX 78216. There were 21 members and 3 guests in attendance.

Harold Fleischer, AE5AS, then introduced himself as Harold AE5AS and then in accordance with SARC custom asked everyone else to introduce themselves.

Harold Fleischer, AE5AS, then turned the meeting over at 7:00 p. m. to Mike Harrison, KB5KST, Vice President, who made an impassioned plea for members to volunteer to give a program at a meeting sometime this year. He then introduced the program. The program was presented by David P. Finell, N7LRY, about Vector Network Analyzers. Mike Harrison, KB5KST, thanked David P. Finell, N7LRY, and turned the meeting at 7:45 p. m. back over to Harold Fleischer, AE5AS, who immediately presented David P. Finell, N7LRY, with a Program Certificate of Appreciation.

Harold Fleischer, AE5AS, then reviewed the printed agenda for meeting with the members present and asked if there were any modifications. There being no modifications suggested, Harold Fleischer AE5AS announced the printed agenda as orders for the meeting without objection by unanimous consent.

Harold Fleischer, AE5AS, then stated that whereas the minutes for the last meeting on March 9, 2017 had been distributed in the April 2017 Bexar Wire newsletter that unless there were corrections or objections that we would dispense with the reading of the minutes and approve them as written without objection by unanimous consent.

Officer Reports:

President

Thank Mike Harrison for following up with Grady's when Pat Knight reported that they had a fire to ensure SARC could still meet here.

The meeting with Holger Hannemann, ZL1IO, from New Zealand on Friday, March 17, 2017 went very well as reported in the Bexar Wire. Those who had the opportunity to attend enjoyed it. ARRL has just released a new book called Grounding and Bonding for the Radio Amateur in which you might be interested.

Need a Newsletter Editor

Need a Webmaster and fortunately someone has just expressed an interest in it so we may have one soon. It is to be discussed with the volunteer after the meeting tonight.

Vice President – Future Program: The May 11, 2017 program will be TBA. He renewed his request for volunteers.

Secretary – no report

Treasurer – Financial Report.

Membership renewals for \$15 and cards are on hand.

Richard Elder, WB5ACN, suggested we look at getting an emergency trailer plate to maybe cut future registration renewal costs.

Newsletter Editor - The April 2017 *Bexar Wire* newsletter was sent out by Bill Crabtree, K5FRQ, on April 10, 2017.

The deadline for input, as stated on the bottom of page 2, remains the last Friday of the month.

Webmaster – The planned two monthly updates for News Blast! and the Bexar Wire were made.

Chairman of the Board Report –Bob Rodriguez, K5AUW, announced that the Board did not meet last month so there is no report.

Committee Reports

Education and Training – Bob Rodriguez, K5AUW, reported that the next class will be a Technician class on Saturday, May 27, 2017, and Saturday, June 3, 2017 at Christus Santa Rosa on Fredericksburg Road in the Med Center. The class will run from 9 a. m. to 5 p. m. each day.

The VEs will conduct the Technician Exam starting at 3 pm on June 3, 2017. The class is free, but you do need to pay the \$15 VE fee. Gordon West, W5YI, has a Technicians book that is recommended for the class that costs around \$22.

Emergency Communications –Lew Archer, W0YVY, gave the report for JC Smith, N5RXS, who is real busy with income taxes.

There was a COMEX in the Rio Grande Valley from 10 am to 4 pm on Wednesday, April 12, 2017. One of the problems noted in their last one was there inability to get messages out of the area. The San Antonio Emergency Operations Center was standing by to participate including hams. Lew, W0YVY, was one of the hands. They received no messages from the Rio Grande so they may still have a problem transmitting out of there.

Harold Fleischer, AE5AS, reminded everyone that a Severe Weather SKYWARN conference will be held on April 22, 2017 at the University of Incarnate Word based on the minutes of the last meeting.

Executive – No meetings since last month.

Field Day – Joe Bruno, W5AUQ, has a broken leg that will cause him to miss Field Day. We will have to find another chairperson to act in his stead.

Joe Bruno, W5AUQ, has not yet filed the permit with the City of Shavano Park. This will be done before the end of April 2017.

Richard Elder, WB5ACN, passed the President a draft letter for use in requesting that the City of Shavano Park host us again.

Finance and Review – Inactive until next January.

JOTA – Bob Rodriguez, K5AUW, had no report since JOTA is next fall.

Membership – Tom O'Brien, AB5XZ, reported that so far we have 106 members for 2017 with 86 paid and 20 free.

Nominating (Inactive-no appointments)

Radio Fiesta – No report.

VEC – The next regularly scheduled session at 10:00 a. m. on April 22, 2017 at the Great Northwest Library.

Centennial Commemoration (Temporary) - Tom O'Brien, AB5XZ, has seen the Alamo Plaza changes and will look at it to see what might be possible.

CW Training (Temporary) – Joe Bruno, W5AUQ, was absent due to his injury so no report.

Tailgate Swap Meet Committee (Temporary) – Richard Elder, WB5ACN, has set up a tailgate swap meet for April 15, 2017 from 7-10 a. m. at Hangar 18 Surplus. If this works, it may become a regular event.

Old Business - None

New Business - None

Announcements For The Good of Amateur Radio

Richard Elder, WB5ACN, talked about BITx40 QRP SSB Transceiver Board Kit and its availability through the website www.hfsigs.com. (8:12-8:16 p. m.)

Emergency Preparation Supplies Sales Tax Holiday on April 22 – 24, 2017 where you can purchase certain emergency preparation supplies tax free during the 2017 Emergency Preparation Supplies Sales Tax Holiday. There is no limit on the number of qualifying items you can purchase, and you do not need to issue an exemption certificate to claim the exemption. This year's holiday begins at 12:01 a.m. on Saturday, April 22, and ends at midnight on Monday, April 24. See Texas Comptrollers publication 98-1017 for more information.

Bob Thompson, K5RWT, announced that anyone needing a 1KW generator should check Harbor Freight as they have one for \$88.

Pete Shavney, WA3OVH, shared some information on wire rope load bearing strengths and offered to make more information available.

The meeting was adjourned at 8:20 p. m.

Bob Thompson, K5RWT, Secretary

Vector Network Analyzers

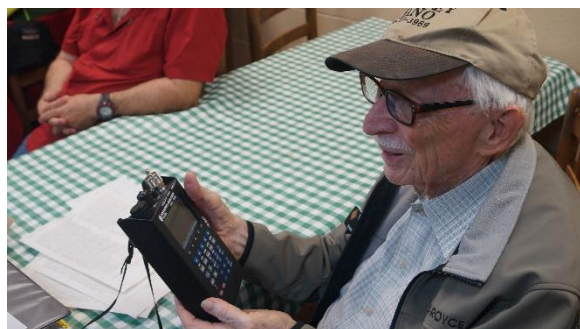
(Continued from Page 1)



Mike Harrison, KB5KST, making his impassioned request for volunteers to step up and present programs at future SARC meetings at the SARC meeting on April 13, 2017



David P. Finell, N7LRY, demonstrating the use of a Vector Network Analyzer on a SARC member's antenna at the SARC meeting on April 13, 2017



Pete Shavney, WA3OVH, looking at the KC901C Vector Network Analyzer belonging to David P. Finell, N7LRY, who presented the program at the SARC Meeting on April 13, 2017

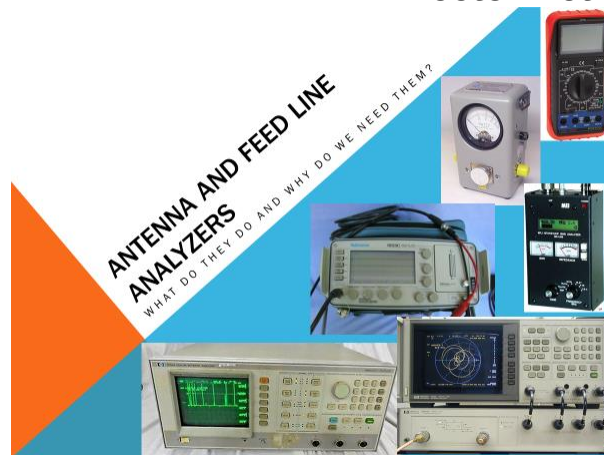
More information on this Technician Class appears in the Minutes and in the Ad on Page 11. Third, Lew Archer, W0YVY, submitted a report for JC Smith, N5RXS, that focused on San Antonio's support of an emergency communications exercise in the Rio Grande Valley where the Rio Grande Valley was focused on getting information out of the Rio Grande Valley. San Antonio handled no traffic during the exercise so apparently the Rio Grande Valley still has issues. Fourth and Last, the VE's were conducting an examination session on April 22, 2017.

It was announced that Joe Bruno, W5AUQ, had broken his leg and an acting Chairperson would be needed for Field Day 2017 as it was expected that Joe, W5AUQ, would be sidelined throughout the summer. In the meantime, the President intended to work with Richard Elder, WB5ACN, and others on preparations for Field Day 2017..



Room wide views of members at the SARC meeting on April 13, 2017 shortly before the official start

Vector Network Analyzers



NOT ALL ANTENNA/FEEDLINE INSTRUMENTS DO EVERYTHING.

Some only do one specific task, but do it very well. Others can do several functions but with varying degrees of accuracy/reliability.

A progression of instruments might look something like this:

- DMM/DVM
- Bird Wattmeter
- MFJ-269 Antenna Analyzer
- Time Domain Reflectometer (TDR)
- Scalar Network Analyzer
- Vector Network Analyzer (VNA)

ANTENNA AND FEED LINE ANALYZERS QUANTIFY CHARACTERISTICS OF ANTENNAS AND FEED LINES

Some measurements commonly made include:

- Forward Power
- Reflected power
- SWR
- Impedance
- Distance to fault
- Insertion loss
- Bandwidth
- Return Loss
- Gain
- Radiation Pattern
- Capacitive and Reactive components
- Phase relationships
- Reflection coefficient
- Q factor

MANY INSTRUMENTS ARE NORMALLY TOO EXPENSIVE FOR THE AVERAGE HAM SO THEY ARE NOT AWARE OF OR FAMILIAR WITH THEM

Here are comparable prices for samples of the various instruments:

• DMM/DVM	\$23.99
• Bird Wattmeter	\$339.00 + ~\$135.00/element
• MFJ-269 Antenna Analyzer	\$379.95
• Time Domain Reflectometer (TDR)	\$1,995.00
• Scalar Network Analyzer	\$4,995.00
• Vector Network Analyzer (VNA)	\$13,133.00
Keysight (Agilent (HP)) N9914A	

WHY DO WE NEED TO KNOW THESE THINGS?

- Ensure safety !!!!
- Ensure compliance
- Prevent equipment damage
- Fault diagnostics
- Station optimization
- Station and equipment design



WHAT IS A NETWORK ANALYZER AND WHAT DOES IT HAVE TO DO WITH RADIO?

Network analyzers measure the network parameters of electrical networks. The term network in reference to network analyzers was used well before the concept of computer networks. So don't think computer network.

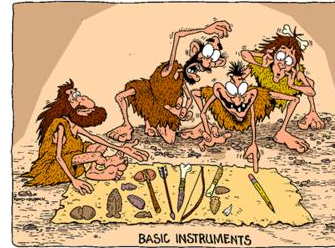
Network analyzers typically measure S-parameters of reflection and transmission. There are other network parameters like Y, Z, and H.

Network analyzers most commonly measure one or two port networks like amplifiers and filters, but can be used with an arbitrary number of ports.

Basically a Network Analyzer is a combination of a signal generator with tracking capabilities, a spectrum analyzer, a field strength meter, and a directional coupler, with a sophisticated computer to analyze the results of given tests.

WHAT CAN A VECTOR NETWORK ANALYZER DO?

- Vector S11 testing
- Scalar S21 testing
- Spectrum analysis
- AF & RF source
- Field Strength



WHAT IN THE WORLD IS AN S PARAMETER, MUCH LESS Y AND Z? I DON'T REMEMBER THAT FROM MY HAM STUDY MATERIAL.

Y parameters measure linear electrical behavior in a matrix with x number of ports. Typically Y parameters describe an admittance matrix of linear and linearized responses of non linear networks.

Z parameters are the inverse of Y parameters.

S parameters or Scattering parameters describe the behavior of linear electrical networks or matrices when undergoing a variety of steady states generated by electrical signals. This is how antennas, transmission lines, filters, etc. respond to a variety of frequencies.

While not in the examination study material; Y, Z, and S parameters are mentioned in the ARRL handbook and other resources in more detail.

WHAT DOES THIS MEAN TO ME? WHAT CAN I DO WITH IT?

Key Measurement Features

- Cable and Antenna testing, Distance to fault, return loss, cable loss, insertion loss
- Smith Chart, S21, S11, Magnitude and Phase
- Spectrum, Field strength measurements
- Independent source and screenshot



YOU SAID MATRIX AND PORTS, I KNEW COMPUTERS WOULD COME IN TO THIS NETWORK STUFF. DO I NEED TO TAKE THE BLUE OR RED PILL?

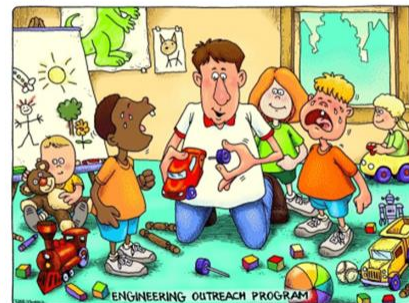
Think of a matrix as a circuit or mathematical representation describing the device under test (DUT).

Think of a port as a place to send and receive information from the device or formula.

When we look at what the matrix responds with after giving it information we can determine the properties of the matrix or formula inside. We can determine the properties of the device.

CAN YOU SHOW ME SOME OF THESE TESTS AND TELL ME HOW THEY WILL HELP ME?

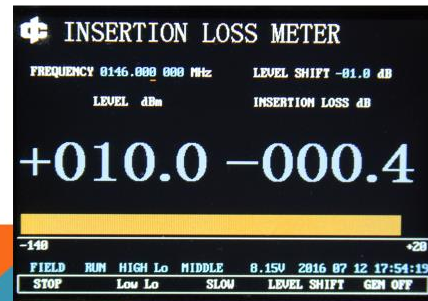
Absolutely, lets start with antenna SWR analysis.



I HAVE A REPEATER. CAN I USE THIS TO DO A QUICK ALIGNMENT OF MY DUPLEXER?



HOW WOULD I MEASURE INSERTION LOSS ON 2M FOR THAT DUPLEXER?



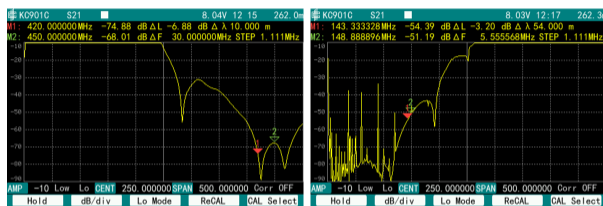
I HAVE A RADIO FEEDING A VHF AND UHF ANTENNA. MY DIPLEXER IS BASICALLY JUST A HIGH PASS AND LOW PASS FILTER. HOW DOES IT TEST THESE?



I HOMEBREWED THIS NEW ANTENNA AND I WANT TO FIND OUT ITS GAIN AND RADIATION PATTERN. CAN THIS PULL THAT OFF?



LOW PASS DIAMOND MX-72D HIGH PASS



SETUP FOR MEASURING ANTENNA GAIN AND RADIATION PATTERN

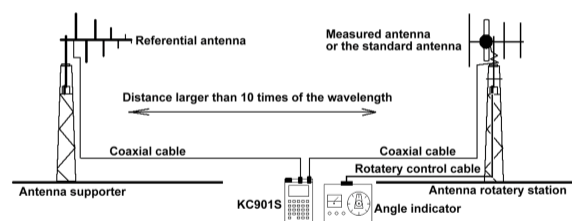
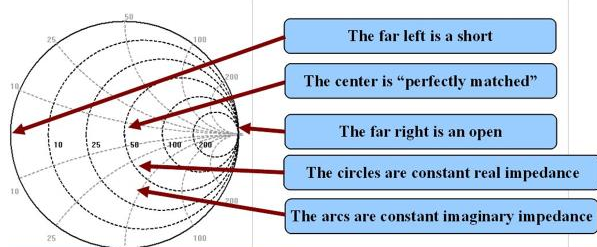


Chart 4-3, Antenna gain measurement in an open area

All this sounds fine but you see I designed this really cool looking antenna for the 2M antenna shootout and its performance sucked. Can this tell me exactly what is going on with my antenna beyond sucky SWR? You said this was a vector network analyzer but all you have talked about so far is functions of a scalar network analyzer. Can this vector stuff point me in the right direction?

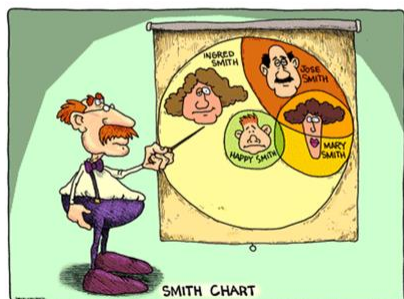
SMITH CHART BASICS

The top half of a Smith chart is inductive and the bottom half is capacitive.

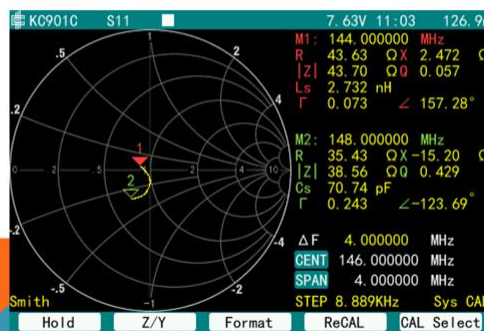


NOW YOU'RE TALKING SMITH CHARTS.

A wonderful tool for some; a headache for others.



HERE IS A SMITH CHART OF A 2M QUADRIFILAR HELIX ANTENNA DESIGNED BY N7LRY



YOU'RE STARTING TO SCARE ME. WHAT IS A SMITH CHART?

The Smith chart was invented by Philip H. Smith. It is a graphical aid to assist in solving problems with transmission lines, matching circuits, and terminating devices.

The Smith chart can be used to simultaneously display multiple parameters including impedance, admittance, reflection coefficients, scattering parameters, noise figure circles, constant gain contours, and regions for unconditional stability.

The Smith chart is normalized at its center, typically at 50 ohms.

OK, YOU HAVE CONVINCED ME THAT A VNA IS AN OUTSTANDING TOOL FOR HAMS. WHAT MAKES THIS ONE SO SPECIAL?

- Cost, big name handheld VNAs cost upwards of \$15,000
- No computer required, completely self contained
- Bandwidth, even the least expensive model of this VNA covers all of the ham bands up to 1.5GHz
- Display, Bright, high resolution 4" color TFT display
- Computer interface and memory card
- Industry standard replaceable N connectors
- Standard lithium batteries
- Very high quality construction
- Designed by and for hams

YOU MAKE THIS THING SOUND PERFECT, WHAT'S WRONG WITH IT?

Nothing is perfect. There are currently no US distributors for this. It can be purchased directly from www.deepeace.net. Expect 3 to 4 days for delivery via DHL.

The instruction manual is limited and in poor English. Some parts of it are very challenging to understand. Fortunately the poor English doesn't translate to the menus or functions of the equipment.

I am not a fan of silicone buttons. They tend to fail over time. This uses a backlit silicone keyboard.

No available soft case like the MFJ antenna analyzers.

All of this being said, Xiao Wu, BG8NPK, and the founder of Deepeace is very helpful and responsive to inquiries and questions about their products.

NICE SALES PITCH. WHAT ARE YOU GETTING OUT OF IT?

Monetarily; nothing, zero, zilch, zip, nada, etc.

I wanted to share what I consider to be a very valuable tool and its capabilities to elevate the ham radio community. I used this to measure several of the antennas at field day this year. I discovered that nearly all of them were operating with a SWR greater than 2.5:1. If you want to make contacts you need a good working antenna. This can and will help if you understand it and how to use it.

I'M A HAM RADIO OPERATOR AND AS SUCH I AM CHEAP. HAMS INVENTED WIRE BY FIGHTING OVER A PENNY. WHAT IS THIS GOING TO SET ME BACK?

While this is inexpensive for what it does, it isn't cheap. There are currently three versions.

KC901C goes from 250 KHz to 1.5 GHz	\$899.00
KC901S goes from 250 KHz to 3 GHz	\$1299.00
KC901V Goes from 5 KHz to 6.8 GHz	\$1499.00



These slides are all in a Microsoft PowerPoint 2016 file that can be emailed to anyone who is interested by simply emailing the editor at the email address shown on Page 2.

TECHNICIAN CLASS COURSE

- Where:** Christus Santa Rosa Medical Center Hospital, 2827 Babcock Rd (West of the Medical Center, between Medical Drive. and Hamilton-Wolfe Rd.), in the Kingman room. (As you go in the main entrance, turn right past the information desk. The room is at the end of the hall.)
- When:** Saturdays, May 27 and June 3, 2017, 9AM to 5PM.
Attendees should attend both sessions. The Technician License Test will be given Saturday, June 3rd at 3PM.
- Cost:** \$15 for license exam by Volunteer Examiners



Recommended study material: Gordon West, W5YI Technician Class Book.
(Available at www.w5yi or 1-800-669-9594. Cost, about \$22)

For additional information, please contact Bob Rodriguez at (210) 887-6618 or bobrod@flash.net

Field Day 2017



Field Day 2017 is only seven weeks away. Active preparations have already commenced. *A key point to remember is: **You do not have to commit to all the hours of Field Day in order to participate.*** SARC recognizes that its members may have a lot of other commitments. Hence, even just an hour or so of time on site is completely acceptable.

Formal application has been made to the City of Shavano Park to use their park area near their City Hall. The City Secretary has already check our June 23-25, 2017 dates and said it will not be a problem. The President of SARC is presently scheduled to receive the supporting proclamation from the City of Shavano Park at the meeting of the Mayor and Council at 6:30 p. m. on Monday, May 15, 2017. All members of SARC are welcome to attend.

The President of SARC has assumed the position of acting Chairperson, Field Day Committee, in light of Joe Bruno, W5AUQ, being sidelined due to a leg injury. The two major lesson's learned from Field Day 2016 that Joe, W5AUQ, have been taken over by the President who is using Joe, W5AUQ, as his principal advisor. The first major lesson learned had to do with safety: quickly being able to disconnect antennas through a patch panel. This patch panel has been built and will be used during Field Day 2017. The second major lesson learned had to do with moving the tent poles. Farly cheap 36" bungee cords have been bought. The 25 poles have been broken into two bundles where each bundle can be handled by one person and the bungee cords are so tight that slip-page of individual poles is averted.



**Patch Panel for antennas ready to accept-
able RF cables from antennas and radios
along with RF patch cables.**

Richard Elder, WB5ACN, has carefully walked other members through the various antenna, pole, tent, electrical, and other components. A lot of component checking and labeling has been done although the RF cables in particular need to be checked. Rich Roudebush, N4DCA, has accepted the position of Generator Man or G Man for short. He is working through the manuals and will get the required gasoline cans. He will also be throwing a generator party before Field Day 2017 to ensure that all four (40 of our generators, two (2) for radios and lights and two (2) for logging computers are in proper working order. Paul Guido, N5IUT, has accepted the opportunity to be the Tent, Computer, and Beam Antenna Master. Paul, N5IUT, has a long history with the Tent. SARC had about 12 pairs of willing hands to put it up last year. Fortunately, those same 12 pairs of willing hands came with 12 pairs of ears that listened to the Tent Master last year. Paul, N5IUT, will be this year's Tent Master. He has been SARC's logging computer guiding light for years. He will do an update before Field Day 2017 like he did for Field Day 2016 and then ensure the whole logging computer network comes up. He also has experience with the 10M-15M-20M Beam Antenna. Again, we had willing hands help last year, and SARC should have a lot this year as long as they have a Master.

Other SARC members have already stpped up to help with Field Day 2017. *Everyone is invited.*



Volunteer Examiners at Work



Pat Knight, AD5BR, Chairperson, Volunteer Examination Committee, and six other members of that committee gathered on Saturday, April 22, 2017, 10:00 a. m. at the Great Northwest Library for the regularly scheduled 4th Saturday of the even month test session. This test session is open to the public although pre-registration is encouraged. A total of ten (10) candidates took tests with all ten (10) passing the test they came to take. One candidate took the General test after passing his Technician test just for practice and surprised himself by passing it as well.



Five candidates taking their examinations on April 22, 2017



License candidates and Volunteer Examiners at the Great Northwest Library at 9:59 a. m. on April 22, 2017 – there is absolutely no need to get there before 10:00 a. m.



Four candidates taking their examinations with the Blue Team of three Volunteer Examiners behind them on April 22, 2017



Volunteer Examiners and candidates getting set up on April 22, 2017



The Red Team of three Volunteer Examiners ready to start grading on April 22, 2017

Amateur Radio Equipment Donations

SARC received the items over the last year. They have appeared in several issues of the **Bexar Wire** with the prices shown in those issues being the estimated value with eBay being a prime source for the value. SARC offered up these items at Radio Fiesta 2017 and sold some. The following is a list of the items still available. ***Make an offer!*** This listing has been updated to show what the *Marked Price* was for Radio Fiesta 2017 and the *Reserve Price*. It does not take very much imagination to figure out how much more amenable to entertaining your offer that SARC is now. Contain Harold Fleischer, AE5AS, with your offer.

SARC Amateur Radio Equipment Donation List			
Picture	Nomenclature	Marked/ Reserve Price	Not e
	Hammarlund HF+-6M Radio Receiver Model Number HQ-110 16.5" W x 9.5" H x 9.5"D	\$160.00/ \$120.00	
	Hallicrafters Transmitter Model HT-40 SN 102117 13.25" W x 7.25" H x 8.5" D	\$100.00/ \$60.00	
	EICO In Circuit Capacitor Tester Model 955 SN 13007 .1-50 MFD 5.75" W x 9.5" H x 5.5" D	\$25.00/ None – sell it	
	Micronta 43-Range Multitester 5.25" W x 6.5" H x 2.5" D in box w/ instructions w/ Black and Red Test Probes	\$25.00/ None – sell it	
	Knight P-2 SWB/Power Meter with Con- nected Transmission Line Interface Box	\$25.00/ None – sell it	

SARC Amateur Radio Equipment Donation List			
Picture	Nomenclature	Marked/ Reserve Price	Not e
	Type CRP-53198 RF Filter Assembly	\$10.00/ None – sell it	

International Crystal Manufacturing Closing Down

International Crystal Manufacturing is circulating a letter that they are closing down. They intend to honor all orders and may accept a few more if they have the raw materials available. If you need or think you may need crystals, you should contact them immediately as they expect to close by the end of May 2017.

SARC NEWSLETTER ITEM FOR MAY 2017

The highlight of the May 11, 2017 meeting of the San Antonio Radio Club will be the presentation by Richard Elder, WB5ACN, as noted on Page 1, on the BITX40 QRP SSB Transceiver.

This transceiver board is available from www.hfsig.com. This 5W SSB transceiver allows an amateur radio operator to get on 40 Meters SSB for under \$100, and provides both a home unit capability and an “Out In The Woods” capability using just a standard dipole antenna. While likely not a record distance for this 5 Watt transceiver, one Ham logged a 7000 mile contact off a dipole antenna.

Come to the May 11, 2017 and see this club project. The BITX\$) QRP SSB Transceiver board is \$59 and shipped free from India. (If you want fast shipping via DHL, the cost is an extra \$10). You have to add a box, power supply, and earphones/headphones/speaker, which is why *under \$100* is stated in the preceding paragraph. , and see or show off your implementation of this simple to hook up transceiver board. Bring your own new BITX40 QRP SSB Transceiver and show off your implementation.

Ham Tailgate Swap Meet

Sponsored by Hangar 18 Surplus



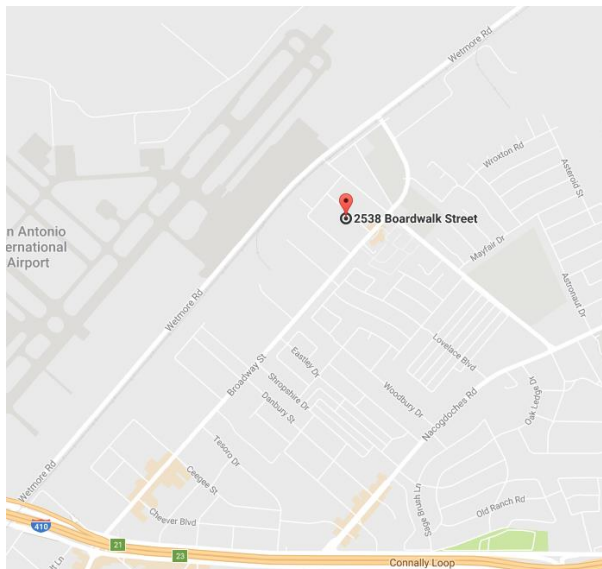
**Saturday, May 27, 2017, from 7 a. m. until 10:00 a. m.
Coffee and Donuts**



Location: Hangar 18 Surplus
2538 Boardwalk
San Antonio, TX 28217

Hangar 18 Surplus carries a wide selection of coax adapters, cables, and the \$1.00/pound electronic chassis/things to be repaired. For the Ham Tailgate Sway Meet, Hanger 18 Surplus will also have a trailer with a selection of used, empty transit cases suitable for use by Hams as GO-KITS and outdoor cabinets suitable for use by Hams for antenna tuners. The cases will be priced at \$1.00/pound.

Hangar 18 Surplus has many embroidered hats and shirts available from an additional product line in which they also do business.



(Normally, this is on the 3rd Saturday, but Hangar 18 Surplus will be at the Dayton Hamvention on the 3rd weekend of May 2017).

Yahoo Groups

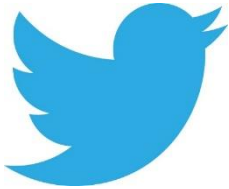


SARC has had a Yahoo Group for a number of years now. Its name is W5SC.

W5SC is being used to publicize SARC business meetings. It can be used for other things like promotion of VEC testing and classes. Members of the W5SC Yahoo Group can and have asked each other technical questions or sought assistance.

W5SC is a closed group. To become a member, go to groups.yahoo.com. (You may need to have a Yahoo account.) This will take you to a website where your groups, if any, are shown with a Search Group box at the top. Enter W5SC. This will take you to the search results page with W5SC on it. Select W5SC to go to the W5SC Yahoo Group. You will then need to select + *Join Group*. This generates a message. SARC members can expect approval to join the W5SC in probably less than 24 hours.

SARC Tweets



Reminder: there are two Twitter accounts for the San Antonio Radio Club. They are @SARadioClub and @ARadioFiesta.

The @SARadioClub is being used to publicize SARC meetings. It can be used for other things like promotion of VEC testing and classes.

As Radio Fiesta 2018 work has not yet commenced, the @ARadioFiesta is currently in standby mode for the January 13, 2018 Radio Fiesta.

SARC members are encouraged to follow both Twitter accounts.

SARC Facebook



There is a San Antonio Radio Club – SARC (@saradioclub) Facebook Page.

The newsletter editor is making posts about SARC meetings and other activities. Any Officer, Committee Chairperson, or member who believes that they have information that should be posted to this page should contact the newsletter editor using the contact information for the newsletter editor on page 2 of this newsletter.

SARC members are encourage to follow this Facebook Page.

SARC has a website:

w5sc.org

Webmaster: webmaster@w5sc.orgt

Amateur Radio License Classes

A Technician Course will be held on May 27, 2017 and June 3, 2017 at Christus Santa Rosa Medical Center. The license test will start at 3:00 p. m. on June 3, 2017.

For more information, contact:
Bob Rodriguez K5AUW, Instructor

SARC Meeting Dates for next 12 Months

May 11, 2017
June 8, 2017
July 13, 2017
August 10, 2017
September 14, 2017
October 12, 2017
November 9, 2017
December (None)
January 11, 2018
February 8, 2018
March 8, 2018
April 12, 2018

Meetings are held at Grady's Barbeque, 327 E. Nakoma Dr., San Antonio, TX 78216 at 7:00 p. m.

Come early and eat with other members coming early.

License Testing Dates for 2017 and early 2018

June 24, 2017
August 26, 2017
October 28, 2017
January 13, 2018
February 24, 2018
April 28, 2018

Times and locations along with required document information can be found on SARC's website.

SARC does all its licensing testing as a part of ARRL Volunteer Examiner Coordinator (VEC) organization so all the Volunteer Examiners in SARC are duly authorized Volunteer Examiners of ARRL's VEC.

Field Day 2017

Setup: Friday, June 23, 2017
Operations: Saturday, June 24, 2017
& Sunday, June 25, 2017

Where SARC proves they are an eating group with a radio problem.

More information to follow, but hold these dates.

JOTA

Boy Scout Jamboree On The Air

This year's date is Oct 21, 2017. The plan is to again hold it at the Texas Transportation Museum.

For more information, contact:
Bob Rodriguez, K5AUW

Radio Fiesta 2018

January 13, 2018
Schertz Civic Center
See newsletter article for more information

Emergency Communications

If you are interested in emergency communications, contact:
JC Smith N5RXS